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ABSTRACT

This descriptive study identified teacher education programs that involve undergraduate preservice teachers in research projects. Information was gathered using interviews, documents, and telecommunications. Data were analyzed utilizing the following questions: (1) What are the goals of student teacher research projects? (2) What are the problems encountered? and (3) What are the characteristics of successful student teacher research projects? Results indicated that project goals form a continuum from improvement of instruction to social and political reformation of schools. Common problems emerging were: (1) finding ways to evaluate the goals of research experience; and (2) overcoming the common obstacles that encumber collaborative research projects in general. Creative ways to overcome these identified obstacles and problems included: (1) building communities of educators within schools who meet regularly to generate research questions, exchange ideas, and experiment together; (2) pairing student teachers with cooperating teachers who have common research interests; (3) engaging student teachers in research experiences after the student teaching semester to enhance reflection; and (4) making sure teacher educators are engaged in researching their own teaching as well as that of student teachers and cooperating teachers. (Author/LL)

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STRENGTHENING STUDENT TEACHERS' REFLECTIVE/CRITICAL THINKING SKILLS THROUGH COLLABORATIVE RESEARCH

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ABSTRACT

STRENGTHENING STUDENT TEACHERS' CRITICAL/REFLECTIVE THINKING SKILLS THROUGH COLLABORATIVE RESEARCH

The educational reform movement of the 1980's has identified a need for scholar/teachers and teacher/researchers who are critical thinkers and problem solvers. The teacher is envisioned as being an active participant in instructional decision making not just a technician who carries out the mandates of "experts" from the university or the school administration. One way to develop and expand the critical/reflective thinking of teachers is to begin in the pre-service years by involving student teachers in research. Evidence suggests that teachers who perceive themselves as researchers in their early years are more likely to expand and refine these skills throughout their careers

This descriptive study identified teacher education programs that involved pre-service teachers in research projects. (The primary focus was on undergraduate programs) Information was gathered using interviews, documents and telecommunications. The data was analyzed using the following questions:

1. What are the goals of student teacher research projects?
2. What are the problems encountered?
3. What are the characteristics of successful student teacher research projects?

Results indicated that the goals of these projects seemed to form a continuum from improvement of instruction to social and political reformation of schools. Common problems which emerged were:

1. Finding ways to evaluate the goals of the research experience
2. Overcoming the common obstacles which encumber collaborative research projects in general

Creative ways to overcome these identified obstacles and problems included:

1. Building communities of educators within schools who meet regularly to generate research questions, exchange ideas, and experiment together
2. Pairing student teachers with cooperating teachers who have common research interests
3. Engaging student teachers in research experiences **after** the student teaching semester to enhance reflection
4. Making sure teacher educators are engaged in researching their **own** teaching as well as that of student teachers and cooperating teachers.

STRENGTHENING STUDENT TEACHERS' REFLECTIVE/CRITICAL

THINKING SKILLS THROUGH COLLABORATIVE RESEARCH

"It is teachers who in the end, will change the world of the school by understanding it"

LAWRENCE STENHOUSE

INTRODUCTION

The educational reform movement of the 1980's has identified the need for scholar/teachers and teacher/researchers who are reflective about theory and their own practice (Berliner, 1986; Schaeffer, 1967; Schon, 1987 Shulman, 1986; Stenhouse, 1985; Zeichner and Liston, 1987). One way to build critical/reflective thinking is through the research process (Zeichner and Liston, 1987). The concept of the teacher as a researcher is not a new one. Dewey (1938) and Pestalozzi (1969) envisioned schools as centers for inquiry and experimentation; places where theory and practice were joined.

During the Progressive Era, all educators were encouraged to use the scientific method to solve educational problems. Buckingham (1926) published a book RESEARCH FOR TEACHERS where he advocated research be a part of public school teachers'job descriptions similar to those of college faculty. Buckingham placed heavy emphasis on quantititative experimental research which is difficult to implement in the field setting. However, in the mid 1940's Kurt Lewin developed a theoretical framework of action research. This process included analysis, fact finding, conceptualization,planning, implementing and evaluting action and was designed to be carried out by practitioners in the field setting. Lewin's work facilitated the concept of teacher as researcher by giving action research both respectability and credibility in the research community. (McKernan,1988)

By the mid-fifties action research was on the wane. Corey (1953) blamed this phenomenon on the scientific community whom he accused of taking over the research process. He based these accusations on the fact that teachers did not seem to use current research findings to improve their teaching but ignored these findings and continued to teach as they were taught. He was joined by Perrodin (1959) and Beckman (1956) who called for teachers and student teachers to examine and improve their own practice by using informal action research. However,soon after this resurrgance of interest in teacher as reseacher occurred, action research was again under attack . Sanford(1970) in his

article "Whatever Happened to Action Research" stated that this decline was due to the split between theory and practice which occurred with the implementation of the research, development and dessimination model (RD&D). Research was again the domain of the experts in regional research demonstration sites. (McKernan, 1988)

Again in the 80's the idea of teacher as researcher became a "hot topic". Schaeffer (1967) and Stenhouse (1985) visualized the teacher as an active researcher who used research methods in making instructional and curricular decisions. Moreover Eleanor Duckworth (1987) espoused that Piagetian concepts apply to teachers who like students must construct their own knowledge and must assimilate new experiences in ways that make sense to them. In the book Opening the Door to Classroom Research, Mary Olson (1990) and her colleagues state that lasting change in schools will start in classrooms not in high-level administrative circles. All these educators believe that teachers are more than just transmitters of knowledge. As teacher/researchers they can become creators of knowledge.

If more teachers become researchers, can they tranform schools into places where knowledge is not only **transmitted** but **created**? The two disciplines of sociology and political science can supply a theoretical framework for addressing this question.

In order for teachers to be researchers and knowledge creators, changes must be made in our present system. Teachers must envision themselves as powerful decision makers who influence and shape educational policy. How can teachers empower themselves?

THEORETICAL PERSPECTIVE

EMPOWERMENT WITHIN THE INSTITUTION

Sociologists advise teachers to empower themselves within the institution of the school by doing the following:

1. Recognizing that knowledge is power and learning the system and how to "work" the system (Moeller, 1968)
2. Obtaining knowledge of subject matter, student characteristics and pedagogical expertise and thereby, strengthening their power position in school and in district decision making (Dodd, 1965)
3. Becoming familiar with alternative school organizational structures, through

    a. the "aggregation model" in which teachers are the center of all school activity and decision making (Janowitz,1969)

b. the "nurturance model" viewing schools as laboratories , research institutes and training sites. (Bredemier, 1968), and

c. professional development schools in which university and school systems work together for joint renewal. (Goodlad, 1988)

EMPOWERMENT OUTSIDE THE INSTITUTION

Anthony Downs (1957) and other political scientists provide teachers with a theoretical perspective to assist them in gaining power in the classroom, district, state and nation. According to Downes, political power is grounded in the presence of **uncertainty.** Governmental leaders cannot always have the necessary data to make rational decisions. As a result, they must depend upon certain specialists to provide needed information. Therefore, "uncertainty helps convert democracy into representative government" (Downs, 1957, p. 88). Moreover "inequality of information always results in a corresponding inequality of influence over government policy formation" (Downs, 1957, p. 257).

Just as in sociological theory, the concept of knowledge as power is reinforced by political science. In fact, Downes further suggests that there are two essential types of knowledge or information that are critical to political decision making and power..

1. Contextual information---basic theoretical knowledge of a subject usually acquired through education and,
2. Current information --- up to date developments that influence the variables in the acquired contextual knowledge.

How can teachers obtain the knowledge and information needed to become the "specialists" who influence political policy formation?

First, **teacher educators** must develop and implement a curriculum which gives future teachers a strong contextual knowledge base. Lee Shulman's (1987) Model of Pedagogical Reasoning and Action could be a valuable resource in assisting in the development of a contextual knowledge base. Second, in order for teachers to obtain current information, they must be able not only to review current research in the field but also to construct and create new knowledge.

How can we help pre-service as well as in-service educators develop and expand their potential in these areas?

One way is for universities and school systems to join hands in improving classroom instruction and teacher education simultaneously through School-University

Partnerships (Atkin, 1989; Goodlad and Sirotnik, 1988 ; Kagan, 1989). Some of these School-University Partnerships have identified collaborative research as a powerful tool in achieving many of their common goals. They recognize the importance of seeing teachers as significant contributors to the research community and respecting them as fellow researchers (Lieberman, 1988).

Teacher education programs can build a strong research component into their student teaching experience. Many believe that if pre-service teachers perceive teaching as an inquiry process that requires ongoing reflection and critical analysis that they will be more likely to continue in this direction throughout their careers. This study explores the questions:

What teacher education programs are providing a collaborative research experience for their student teachers?
What are the goals for these experiences?
What are problems that these programs have experienced?
What are the characteristics of successful student teacher research programs.

METHODOLOGY

Qualitative methods were used including interviews, observation, participant/observation, case studies and documents.

Research process

Identification of teacher education programs with a strong research component (all student teachers participate in collaborative research as a member of a research team with cooperating teacher and university faculty)

Gather information through interviews and documents from each of these programs to identify common variables which could be replicated in other institutions

Analyze and synthesize this data for dissemination

DATA COLLECTION

Leaders in the field were contacted to identify current collaborative projects around the country.

Directories of collaborative research projects as well as a computer search provided additional data sources.

Telecommunications networks and professional newsletters were also used to tap into sources not readily identified in the current literature.

A case study of a collaborative research project (University of North Carolina at Asheville) was examined in-depth.

DATA ANALYSIS

Yin's (1989) method of using theoretical propositions in the form of research questions was used to analyze the data. They are as follows:

What teacher education programs are engaging their student teachers in a structured research experience?

Why do these programs engage their student teachers in action/collaborative research? What are their goals?

What are the characteristics of successful student teaching research programs?

What are the problems they are experiencing?

WHAT TEACHER EDUCATION PROGRAMS ARE INVOLVING STUDENT TEACHERS IN A STRUCTURED RESEARCH EXPERIENCE?

Many teacher education programs agree that technical knowledge is important and is the foundation of reflection and critical thinking. They are striving to go beyond the realm of technical skills to develop critical thinkers and reflective practitioners. There are numerous ways to develop these dispositions: journal writing, interviews, video and audio taping of lessons and action research. This project focused on the use of collaborative/action research as a vehicle to develop and expand reflective/critical thinking in pre-service teachers.

Some programs include graduate and undergraduate student teachers as volunteer collaborative researchers but the research experience is **not required** of all student teachers. Examples include:

Teachers College-Columbia (National Science Foundation Grant)

University of California-Riverside (Writing Research Project)

University of Oklahoma- masters thesis can be collaborative research

Strong research components seem to be more prevalent in the fifth year or graduate teacher education programs. They include:

University of Virginia

University of Florida PROTEACH

University of Pennsylvania START (Student Teachers as Researching Teachers)

Institutions that require **undergraduate** student teachers to participate in research experiences include the following examples:

The University of Wisconsin -Madison,

Southern Connecticut University,

University of Houston,

University of North Carolina at Asheville,

California State University-Dominguez Hills.

International examples of undergraduate student teacher research include

Israel, Hebrew University of Jerusalem (Cohen and Alroi,1981)
United Kingdom Suderland (Biott,1983)

These teacher education programs will be examined to address the research questions previously cited.

WHAT ARE THE PROGRAM GOALS FOR STUDENT TEACHER RESEARCH?

The involvement of student teachers in research was prevalent in the fifties where they were placed with cooperating teachers engaged in action research. In the eighties this idea became popular again as evidenced by the recent articles and books on the subject. When I analyzed the data for common themes or patterns the following categories seemed to emerge:

1950's

Perrodin (1959) stated that the goals of the University of Georgia in Athens were to:

> encourage growth of the individual by giving them simple action research skills(generating problems, hypotheses, taking action, reporting findings and evaluation)
>
> provide confidence to solve future problems by using action research

Beckman (1957) at Wesleyan College stated their goals were for student teachers to sharpen their understanding of the teaching/learning process and the role of the teacher

1980's

Cohen and Alroi (1981) involved 133 Israeli student teachers in action research with the goals of improving decision making and therefore, improving instruction.

Biott (1983) in Sunderlund, United Kingdom focused on self-evaluation and curriculum evaluation. He wanted student teachers to view teaching as a process to avoid them teaching as they were taught.

Hanna (1986) at California State University-Dominguez Hills had student teachers analyze two instructional units by administering pre-tests and post-tests. His goal was to improve teacher effectiveness.

Ross (1987) stated that the goal of the research experience is reflective teaching or seeing teaching as integrally related to research which involves inquiry and experimentation. The University of Florida Proteach program stresses reflection by having student teachers conduct their research the semester **after** student teaching so they can step back from the intensity of full-time teaching and devote quality time to their project.

Fosnot (1989) at Southern Connecticut University has created a Piagetian/Constructionist approach to teacher education which includes four types of research experiences:

investigative- field studies in methods courses
cooperative- during student teaching
reflective- after student teaching
integrative- as a clinical fellow- paid position with university supervision

The primary goal of this program is to for student teachers to create their own knowledge through inquiry and reflection.

1990's

University of Virginia's goal is to create "curious" teachers who will ask questions and use inquiry and experimentation to explore answers.

University of Houston has its student teachers conduct an ethnographic research project to examine the community where they will be student teaching. This provides the student teacher with information that will increase

sensitivity to the children's perspective about school and learning (Clift, Houston, and Pugach 1990).

Zeichner and Gore (1991) describe the University of Wisconsin-Madison's goal of student teaching research as primarily reflective in nature. Reflection has three integrated dimensions (technical, practical and critical) which are all valuable. However, if schools are going to be restructured social, ethical, and political issues should be considered for research examination. Issues of gender, race, ethnicity and social class are examples of possible research interests. Student teachers are encouraged but not required to examine socially critical research topics.

University of Pennsylvania's PROJECT START (Student Teachers as Researching Teachers) has as its goal building communities of educators who experiment with and exchange new ideas. Student teachers are placed with cooperating teachers and university supervisors who are active researchers. Research groups of 7-9 meet weekly to discuss their research. Teachers are encouraged to ask questions and "teach against the grain" (Cochran-Smith and, Lytle 1991).

University of North Carolina at Asheville invites educators to a research seminar the semester prior to student teaching to generate relevant research topics. Then student teacher candidates choose a topic, conduct a literature search and generate a preliminary bibliograpy. During the student teacher semester the research design is completed and implemented with the collaboration of the cooperating teacher and university supervisor. The goal of this experience to develop critical/reflective thinking skills through collaborative research.

In summary, the goals of research experiences for teachers seem to form a contiuum from improvement of instruction to school reformation and restructuring. In the fifties the goals focused on improvement of instruction through analysis of a unit or decision making and solving instructional problems. The expectation was that student teachers who used research to solve small problems would be more able to solve larger problems in their future teaching. In the 80's and 90's the goals of student teacher research moved more to reflection and critical thinking. Topics for research went beyond immediate instructional problems to social, ethical, political dimensions of the school culture. Presently, research projects are used to move student teachers beyond the "What works? questions" to those of" Why this does or does not work" (Ross,1990). Student teachers' beliefs and values about equality, justice, compassion and intellectual excellence are often the basis for research projects. (University of Pennsylvania and University of Wisconsin-Madison) The goals of research activities are

becoming more complex and more diverse which contributes to the problem of trying to measure their effectiveness.

{SEE FIGURE 1]

WHAT ARE THE COMMON OBSTACLES TO TEACHER AS RESEARCHER PROGRAM DEVELOPMENT IN GENERAL?

Marilyn Cochran-Smith (1991) at the University of Pennsylvania outlines her views on this based on her experiences in two teacher/researcher communities (Philadelphia Writing Project and Network of New and Experienced Urban Teachers)

1. Teacher isolation- teachers are not secure to discuss and expose their failures and do not want to lose autonomy.

2. Occupational Socialization- Teachers are socialized to be self-sufficient, certain, and independent. Being uncertain and asking questions can be seen as inappropriate behaviors.

3. Knowledge base for teaching- Teachers are not an active part of generating the knowledge base but passive consumers of university based research

4. Reputation of Educational Research-
   A. Research has been used to blame teachers
   B. Findings have been reported in ways that are inaccessible and seemingly unrelated to the everyday realities of school and often seem distant, uninteresting and impenetrable.

Jerry Moore at the University of Virginia stated that one way they have attempted to overcome the negative feelings that the term research elicits was to call the research project a field project. Somehow, the term field project seems less threatening than a research project.

WHAT ARE THE SPECIFIC PROBLEMS OR DILEMMAS WHICH PREVENT FULL IMPLEMENTATION OF PROGRAM GOALS?

1. Common Definition of Reflection

Program implementors who want to develop and expand reflective/critical thinking must come up with a common definition. Currently, the term reflective/critical thinking is often used in a vague, general way which is relatively meaningless. What is reflection? What is critical thinking? What do we want student teachers to reflect upon or about? Can they reflect on anything such as how to be an ineffective teacher and still reach program goals? What specific reflective/critical thinking skills are of most worth?

One common definition that emerged is as follows:

FIGURE 1

RESEARCH GOAL CONTINUUM

1	2	3	4	5
Improvement of Instruction	Decision Making	Construction of own Knowledge	Development Reflective/ Critical Thinking	School Reform

1. Student teachers learn to analyze and improve their instruction thereby becoming more effective.

2. Student teachers become more effective decision makers.

3. Student teachers learn to construct their own knowledge.

4. Student teachers expand and refine their critical/reflective thinking skills.

5. Student teachers can reform and change the school culture through engaging in socially critical action research.
   a. social reconstructionist (socially critical research)
   b. "teaching against the grain"- teacher-researcher communities

Relective teaching is a way of thinking about educational matters that involves the ability to make rational choices and to assume responsibility for those choices(Goodman,1984; Ross,1987; Zeichner and Liston, 1987).

Also, reflection has three components that are integrated.

TECHNICAL-
Student teachers learn to analyze and improve their instruction through action research. (example, How can I increase completion of morning work?)

PRACTICAL-
Student teachers become better decision makers through action research. (example, What do I really believe about gender roles in my classroom?)

CRITICAL-
Student teachers become aware of social, political, ethical issues in the school culture and see ways to become active change agents. (example, Is ability grouping consistent with my beliefs about justice, compassion and fairness?) (Noffke and Brennan, 1991)

University of Wisconsin, University of Houston, and University of Florida and University of Virginia have adopted this common definition of reflection which is the catalyst for their research experiences. However,research is seen as only one of many ways to develop reflection and should be used in combination with other strategies.

2. Evaluation

Another problem is measuring to see if in fact these pre-service teachers develop reflective/critical thinking skills from this experience? Presently, programs are struggling with evaluation of their goals. The overriding goal is improvement of teaching and learning which can be measured by conventional methods; however specific subgoals have been difficut to measure. The following methods are being used:

a. journals,
b. coding writing assignments
c. videos combined with interviews
d. interviews with student teachers as to the research project's usefulness
e. examining completed research projects for indications of socially critical themes

Kenneth Zeichner at University of Wisconsin-Madison said that he and his colleagues were disappointed about the small number of research papers with socially critical themes. However, they did not want to force their own "research agendas" on the students because there is a fine line between

encouraging students to adopt socially important topics and forcing your own values on them unconsciously.

Are program participants more likely in their future careers to be reflective thinkers and teacher/researchers than others who do not participate in research?

I was not able to locate any longitudinal studies that looked at long-term benefits of research activities. This can be difficult as student teachers often move away from the area and are difficult to find for surveying or interviewing. Presently there are:

a. one-semester follow ups (interviewing teachers as to the usefulness of the research experience), University of Wisconsin-Madison,
b. longitudinal data is being collected from grant projects such as the Philadelphia Writing Project,and Network of New and Experienced Urban Teachers , and
c. a two year follow up system is in place in North Carolina to monitor the progress of all beginning teachers during their first two years of teaching which could be useful in generating longitudinal data.

In summary, the common problems seemed to fall into two categories. One being the overall, general problems that one encounters when trying to get teachers in the field to become involved in research activities. This general resistance to and avoidance of research activities are recognized as real issues that must be addressed in new and creative ways if progress is going to be made. One way is to turn these problems into research questions which can be examined systematically and scientifically. As John Dewey (1933) stated "A question well put is half answered" (p.108). Using school/university partnerships and student teachers' research projects to build communities of educators who will address these general problems/research questions is another way to meet this challenge.

The second category of problems is centered around the issue of evaluation. Measuring to see if these research experiences are really worthwhile in terms of time and resources expended is a central issue. Because there is little agreement on how you measure reflective/ critical thinking skills this contributes to the problem. Therefore, designing evaluation strategies for research experiences is another task for teacher educators.

WHAT ARE THE CHARACTERISTICS OF SUCCESSFUL PROGRAMS?

1. Teacher educators are involved in reflective/critical thinking about their **own** teaching. Instead of being reflective about only their disciplines these educators examine their own courses, syllabi and supervisory work with

a reflective/critical eye. Student teachers see themselves as partners in the improvement of instruction at the university and school level.

Jennifer Gore at University of Newcastle,Australia observes that when teacher educators use research as a vehicle for improving their supervision it creates a partnership with student teachers and cooperating teachers rather that a hierachy as well as providing a good excuse to get feedback.

2. There is a concentrated effort at building communities of educators interested in improving and changing the status quo. Starting out in only one or two schools instead of trying to go district wide seems to work best. Symposiums to share and discuss research projects as well as weekly meetings of smaller groups of 6-9 are critical to success. Finding time to participate in research groups requires us to re-examine the role of teachers so they can have more control over allocating time to knowledge generation.

UNCA faculty, student teachers and staff at Emma Elementary School meet every Monday afternoon to address instructional issues which can be addressed through research.. They received a state grant to "Strengthen Student Teachers' Reflective/Critical Thinking Skills Through Collaborative Research". Research teams made up of university supervisors, cooperating teachers and student teachers are presently exploring the question "How can telecommunications be used in the classroom to build literacy?"

3. Teacher educators spend time in the school setting listening and talking to teachers to understand their "ways of knowing". Teacher educators value the knowledge that teachers and students bring to the setting. In addition, they set a rigorous agenda of empirical research to mimimize the danger that "wisdom of practitioners will become unexamined truth" (Porter 1987, p.151). This process allows them to jointly develop research agendas that are real and important to all rather than the dichotomy that exists between real research at the university and quasi research at the school level.

Philadelphia Writing Project and Network of New and Experienced Urban Teachers are good examples of this.

4. Student teachers,teachers and university faculty perceive teaching as research and themselves as researchers. They see themselves as decision-makers and critical/reflective thinkers who can make a difference in the lives of children. They are not passive recipients of the ideas and knowledge of others.

5. Participating in reseach activities **after** student teaching as in University of Florida and University of Virginia seems to promote greater reflection than during or before student teaching.

6. Generating and selecting research topics of mutual interest to all the research team is another criteria for success.

A UNCA student teacher says "It's great having my cooperating teacher excited about my research project!"

RESULTS and CONCLUSIONS

Teacher education programs must examine ways to strengthen the reflective/critical thinking skills of future teachers for reformation and restructuring of schools to occur. Teachers should perceive themselves as creators as well as transmitters of knowledge. Collaborative research in the classroom is one vehicle to accomplish this goal. Presently, there is a great deal in the literature about collaborative research, school-university partnerships, and the teacher as researcher. However,information about successful collaborative research programs involving student teachers at the undergraduate level is not plentiful. After examining the samples of teacher education programs that were either found in current literature or revealed in interviews and correspondence with other teacher educators the results seem to indicate that there is a strong committment to going beyond the technical in teacher training. There are teacher educators who are collaborating with each other and with public schools through school-university partnerships to design meaningful research experiences for their pre-service teachers. Participation in these activities will hopefully move future teachers from "the fringe to the forefront" of school reformation and restructuring (Cochran-Smith and Lytle 1991).

Future directions include:

1. Establishing networks especially telecommunications networks through professional organizations and at the personal level to exchange ideas. Also, petitioning for time at state, regional and national conferences to meet and have the forum to share experiences without being required to present a formal research paper. (A special interest group of being organized on School-University Partnerships at AERA's 1992 annual conference in San Francisco from 10:35 to 12:05 in the Mason Room on 4-23-92)

2. Formulate research designs that could include longitudinal studies of graduates who have participated in action/collaborative research projects.

3. Do indepth historical anaylses of individual teacher education research programs by interviewing teachers, student teachers, school principals, and university faculty.

4. Pursue publishing possibilities in journals that welcome collaborative research reports conducted by student teachers, cooperating teachers and university faculty (Kenneth Zeichner will share information about publishing possibilities at the AERA special interest group cited above).

REFERENCES

Atkin, M.J. (1989). Can educational research keep pace with educational reform? Phi Delta Kappan, 71(3), 200-205.

Beckman, D. (1957). Student teachers learn by action research. Journal of Teacher Education, 8(4),369-375.

Berliner, D.C. (1986). In pursuit of the expert pedagogue, Educational Leadership August/September 1986, pp. 5-13.

Biott,C.(1983). The foundations of classroom action research in initial teacher training. Journal of Education for Teaching, 9(2),152-160.

Boocock,S.S. (1980). Sociology off education: An Introduction. Lanham,MD: Houghton Mifflin.

Bredemier, H.C. (1968). Schools and student growth. Urban Review, 3, 21-34.

Clift,R.T., Houston, W.R. and Pugach,M.C. (eds). (1990). Encouraging reflective practice in education: An analysis of issues and programs. New York: Teachers College, Columbia University.

Cochran-Smith, M. (1991). Learning to teach against the grain. Harvard Educational Review, 61 (3),279-311.

Cochran-Smith, M. and Lytle, S.L. (1990). Research on teaching and teacher research: The issues that divide. Educational Researcher, 19 (2), 2-11.

Cochran-Smith,M. and Lytle,S.L. (in press). Communities for teacher research: Fringe or forefront? American Journal of Education.

Cohen, A. and Alroi, N. (1981). Diagnostic action research as an instrument in teacher education. Journal of Education for Teaching. 7 (2), 176-186.

Corey, S.M. (1953). Action research to improve school practices. New York:Teachers College, Columbia University.

Dewey, J. (1933). How we think. Chicago: Regency.

Dewey, J. (1938). Experience and Education. New York: Collier Books.

Dodd, P. C. (1965). Role conflict of school principals. Final Report No.4, Cooperative Research Project No. 83, Graduate School of Education, Harvard University.

Downs, A. (1957). An economic theory of democracy. New York: Harper and Row.

Duckworth, E. Teaching as research . Harvard Educational Review, 56,(4), pp.481-495.

Duffy, G.(1990) The Michigan partnership for new education East Lansing,Michigan: Michigan State University Publication.

Duffy, G. (1990). What counts in teacher education? Dilemmas in educating empowered teachers , paper presented at the Fortieth Annual Meeting of the National Reading Conference, Miami Beach, November 28, 1990.

Fosnot, C.T. (1989). Enquiring teachers enquiring learners: A constructivist approach for teaching. New York: Teachers College, Columbia University.

Glickman, C. D.(1990). Pushing school reform to a new edge: The seven ironies of school empowerment. Phi Delta Kappan, 72 (1), pp. 6

Goodlad J. I. and Sirotnik K. A. eds. (1988). School / university partnerships in action: Concepts, cases and concerns . New York: Teachers College Press, 1988.

Gore, J.M. (1991). Practicing what we preach: Action research and the supervision of student teachers. In B.R. Tabachnick & K. Zeichner (Eds), Issues & Practices in inquiry-oriented teacher education. Philadelphia: Falmer Press.

Gore, J.M. and Zeichner, K.M. (1991). Action research and reflective teaching in preservice teacher education A case study from the United States. Teacher and Teacher Education, 7 (2), 119-136.

Hanna, B. (1986). Improving student teaching effectiveness through action research projects. Action in Teacher Education, 8 (3), 51-56.

Janowitz, M.(1969). Institution building in urban education. Hartford, Conn.: Printers.

Kagan D. M. (1989). The cost of avoiding research. Phi Delta Kappan., 71. pp. 220-224.

Lieberman, A. (Ed.) (1988). Building a professional culture in schools. New York: Teachers College Press, 1988.

Lortie, D. (1975). Schoolteacher. Chicago: University of Chicago Press.

McKernan, J. (1988). The countenance of curriculum action research: Traditional, collaborative, and emancipatory-critical conceptions. Journal of Curriculum and Supervision..3 (3),173-200.

Moeller, G. (1968). Bureaucracy and teachers' sense of power. In R.R. Bell and H. R. Stub (Eds.) , In sociology of education. Homewood, Ill: Dorsey.

Noffke, S. & Brennan,M. (1991). Student teachers use action research: Issues and examples. In B.R. Tabachnick & K. Zeichner (Eds.). Issues and practices in inquiry-oriented teacher education. Philadelphia:Falmer Press.

Olson, M. W. (Ed.). (1990). Opening the door to classroom research. Newark, Delaware: International Reading Association.

Perrodin, A.F. (1959). Student teachers try action research. Journal of Teacher Education, 10 (4),471-474.

Pestalozzi, J.H. (1969). The education of man:aphorisms.New York: Greenwood Press.

Porter, A. (1987). Teacher collaboration: New partnerships to attack old problems. Phi Delta Kappan Oct.1987,pp.147-152.

Porter, A. (1988). Synthesis of research on good teaching: insights from the work of the institute for research on teaching. Educational Leadership , May 1988, pp. 74-83.

Ross,D.D. (1989). Action research for preservice teachers: A description of why and how. Peabody Journal of Education,64 (3), 131-150.

Ross, D.D. (1990). Programmatic structures for the preparation of reflective teachers. In R.T. Clift, W.R. Houston & M.C. Pugach (Eds.), Encouraging reflective practice in education. New

York:Teachers College Columbia University.

Rudduck, J., and Hopkins, D. (Eds.). (1985). Research as a basis for teaching: Readings from the work of lawrence stenhouse. Portsmouth, NH: Heinemann Educational Books.

Schaeffer R.(1967). The school as a center of inquiry. New York: Harper and Row.

Schon, D.A. (1987). Educating the reflective practitioner. San Francisco: Jossey-Bass.

Shulman, L.S (1987). Knowledge and teaching: Foundations of the new reform. Harvard Educational Review 57 (1),1-22.

Shulman L. S. (1986). Those who understand knowledge growth in teaching. Educational Researcher, February 1986, pp. 4-14.

Smagorinsky, P. (1990). The student teacher/cooperating teacher collaborative study: A new source of knowledge. Paper presented at the annual meeting of the American Educational Research Association, Boston. April 19,1990.

Yin, R.K. (1989). Case study research:Design and methods. London: Sage Publications.

Zeichner, K., & Liston, D. (1987). Teaching student teachers to reflect. Harvard Educational Review, 57, (1), 1-22.